Innovation Saskatchewan

Annual Report for 2013-14

Government of Saskatchewan

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Letters of Transmittal

Her Honour, the Honourable Vaughn Solomon Schofield,
Lieutenant Governor of Saskatchewan

May it Please Your Honour:

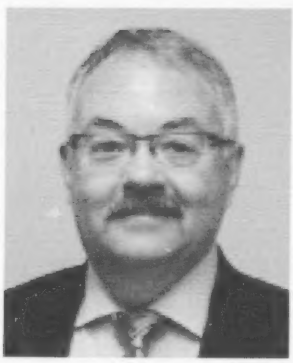
The Government of Saskatchewan recognizes the role innovation plays in growing the province and the economy, which is why it is a key pillar of the Saskatchewan Plan for Growth, a plan that outlines the priorities for the province's economy moving forward into the year 2020.

With the leadership and support of Innovation Saskatchewan (IS), we can increase innovation capacity and expertise in all industries and corners of the province. IS is responsible for developing policies and programs that support innovation, collaborating with industry to enhance innovation, and investing in projects that have the potential for significant economic impact.

With its commitment to increasing innovation capacity, IS is helping build a brighter, more prosperous Saskatchewan for all residents of the province. We are fortunate to have an agency dedicated to supporting the advancement of innovation in Saskatchewan.

On behalf of IS and the IS Board of Directors, I have the honour to submit herewith the Annual Report of Innovation Saskatchewan, together with the financial statements, for the fiscal year ending March 31, 2014.

Honourable Jeremy Harrison
Minister Responsible for Innovation Saskatchewan
Chair of the Innovation Saskatchewan Board of Directors



The Honourable Jeremy Harrison
Minister Responsible for Innovation Saskatchewan

Dear Sir:

I have the honour of submitting the Annual Report of Innovation Saskatchewan for the fiscal year ending March 31, 2014. This report has been prepared and carefully reviewed under my direction, and accurately represents the activities and accomplishments of our agency during the past year.

Dr. Jerome Konecsni
Chief Executive Officer
Innovation Saskatchewan

Board of Directors

Innovation Saskatchewan (IS) is led by a board of directors who have strong backgrounds in innovation. They collectively have knowledge and experience in the industrial sectors important to Saskatchewan and bring a perspective from inside and outside the province. The board provides oversight and strategic direction to IS. Key in its responsibilities is the hiring and supervision of a Chief Executive Officer to manage the affairs and business of the agency, review/approve its annual budget, and review/approve projects seeking funding through funds held by the agency for that purpose. The members of the IS Board of Directors are:

Honourable Jeremy Harrison (Chair)
Minister Responsible for Innovation

Honourable Bill Boyd (Vice-Chair)
Minister of the Economy

Mr. Daniel Halyk
President and CEO
Total Energy Services Ltd.
Calgary AB

Mr. Warren Steinley
MLA
Regina Walsh Acres
Regina SK

Ms. Pam Haidenger-Bains
Owner
Down to Business
Saskatoon SK

Mr. Trevor Thiessen
President
Redekop Manufacturing
Saskatoon SK

Dr. Eva Lee Kwok
Chair and CEO
Amara International
Investment Corporation
Vancouver BC

Introduction

This annual report presents activities and results of Innovation Saskatchewan (IS) for the fiscal year ending March 31, 2014. It reports key accomplishments of the agency.

As the Government of Saskatchewan's central agency supporting innovation in the province, IS works directly with industry and other stakeholder groups to encourage the commercialization of technology and increased productivity for economic benefit to the province. It also plays an important co-ordinating role with other ministries and Crown corporations to ensure that policies and priorities across government are aligned with the innovation agenda.

IS was proclaimed on November 2, 2009, and began independent operations as an agency on April 1, 2010.

Agency Overview

Innovation Saskatchewan, located at Innovation Place in Saskatoon, is the Government of Saskatchewan's key agency supporting innovation in the province. Innovation Saskatchewan works directly with industry and other stakeholder groups to encourage the commercialization of technology and increased productivity for economic benefit to the province. Under *The Innovation Saskatchewan Act*, IS has a mandate to:

- Facilitate the co-ordination and strategic direction of the Government of Saskatchewan's support for research and development and science and technology with the objective of fostering the development of new ideas, products and processes to ensure the long-term sustainable growth of Saskatchewan's economy;
- Provide advice and guidance to the Government of Saskatchewan respecting science and technology policy, and to establish, measure, monitor and report on the Government of Saskatchewan's strategies and goals for advancing innovation in Saskatchewan;
- Co-ordinate and support the establishment and maintenance of science, research and development infrastructure in Saskatchewan;
- Provide recommendations to the Government of Saskatchewan respecting research, development, demonstration and the commercialization of new technologies and innovative processes in Saskatchewan. IS also advises on policies that may better co-ordinate, support, foster, promote and facilitate research, development, demonstration and the commercialization of technology;
- On request of the Lieutenant Governor in Council, to undertake any program or activity for the purposes of achieving the objectives described above; and
- Undertake any other prescribed programs and activities.

Creation of the Innovation Strategy

Background

Innovation can be defined as:

The creation and transformation of knowledge and ideas into new products, processes and services that meet market needs.

In more practical terms, innovation can be viewed as the process of converting knowledge into wealth. **To be innovation, new knowledge must be implemented to provide an economic or social benefit**.

Mission Statement

On September 28, 2010, the Board of Directors of Innovation Saskatchewan (IS) created the following Mission Statement:

"To be an innovation catalyst serving the needs of individuals, companies and institutions."

Ultimately, the goal of IS is to encourage the existence of sustainable, globally competitive business in the province.

Focus

Government support for innovation in most jurisdictions focuses on two areas – assuring that the environment for innovation exists within the jurisdiction and working to enhance the productivity of companies within the jurisdiction. Many factors influence the provincial innovation system and therefore need to be included in an innovation strategy. These include, among others:

- The financial capacity of Saskatchewan companies to transfer technology, commercialize research or implement new technology in production or service, and the availability of funding or investment;
- The willingness, or lack thereof, by Saskatchewan companies to invest in research and development and the capacity of Saskatchewan companies to integrate new technologies into their existing products, product lines and/or processes;
- Human capital – the need for a skilled workforce and the impact of changing demographics in the workforce, including the management capabilities within Saskatchewan companies; and
- Research, technology transfer and commercialization entities and their capabilities.

Saskatchewan's Innovation Strategy

Saskatchewan's economy is driven by its natural strengths in three sectors – agriculture, oil and gas, and mining. The intersection of these core economic engines and the goal of creating sustainable, globally competitive businesses supported by a focus on productivity improvement and a supportive innovation environment form the innovation agenda for Innovation Saskatchewan (IS). For example, a life science project that develops technology to increase the output from Saskatchewan heavy oil wells would benefit one of the core economic engines of the province while developing new products or services produced by another. Focusing on the core economy provides a natural "at home" customer base into which a new technology can be launched. Once proven, it can be extended to new markets outside the province. New product development focused on serving Saskatchewan's primary sectors is much more likely to be sustainable in the marketplace.

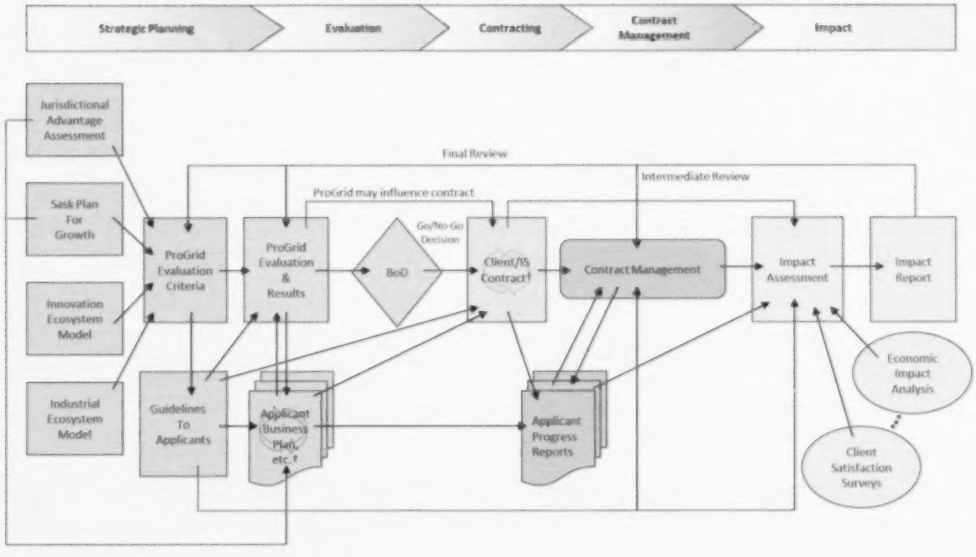
Project Management Roadmap

Innovation Saskatchewan has developed a Body of Practice, described in its Project Management Roadmap, which enhances IS's ability to evaluate opportunities, manage contracts and measure impact. It provides a means of accountability for IS investments, while at the same time creating a continuous improvement model allowing IS to become more efficient and accountable as we learn from prior experience. An overview of the roadmap diagram is shown below.

The process begins with establishment of the strategic objectives IS is trying to achieve through its investments, as described in the Jurisdictional Advantage Assessment, the Saskatchewan Plan for Growth and our understanding of the environment necessary to encourage innovation in the province. These together inform the criteria to be used in evaluating project proposals. IS has chosen to use the ProGrid framework and methodology. Project proponents are informed of the criteria and a lead person within IS works with the proponent to understand and, if necessary, refine the project to align with these criteria.

Once a project is approved internally, it is recommended to the IS Board of Directors. Assuming board approval, the IS lead begins discussion of contract details with the proponent, based on an established contract template. The contract reflects the timelines, deliverables, milestones, reporting, payment schedules and other details agreed to by the proponent during the earlier discussions. The project is managed according to this contract over its lifetime by IS.

Upon completion of the contract, an analysis is done by an independent third party to determine whether IS achieved the stated objectives or had the desired outcomes from the investment and perform an evaluation of the outcomes and impacts, preferably. The impact analysis and report form a continuous improvement feedback, which informs ongoing relations with the client, while at the same time providing information that may be used to improve IS's contract management and project evaluation methods. It may also provide insight into the design of the underlying strategy.



Progress in 2013–14

Saskatchewan Advantage Innovation Fund (SAIF)

Innovation Saskatchewan makes strategic innovation investments through its Saskatchewan Advantage Innovation Fund (SAIF). Projects need to be aligned with provincial priorities and have the potential to create significant economic impact. The range of projects that have received funding through SAIF have varied from activities that are fairly far upstream near the research end of the spectrum to development work very near to the commercialization stage. Common to all initiatives are significant industrial investment and involvement, and a clear path to implementation of the results of the funded work.

The development of SAIF projects is time consuming. It begins with opportunity identification; moves to assembling a team of user company(ies), technology development company(ies) and research organizations; then to the creation, evaluation and modification of a proposal; finally to approval and contracting stages. A diagram of the SAIF pipeline from its inception to June 2014 is shown on page nine.

IS began the 2013–14 fiscal year with $4,450,000 in SAIF. This was a combination of $3,370,000 budget allocation plus $1,080,000 carried forward from previous years. As the following table illustrates, IS's board provided approvals that committed $3,723,000 in 2013–14, leaving $597,000 available for future projects.

Initiative	2013-14 Budget ($1,000)	Status	EOR Subtotal	Funds Committed ($1,000)	Funds Available ($1,000)
Unallocated Funds carried forward	600	Funds carried forward			600
Telecommunications Research Laboratories (TRLabs) Budget	480	Funds carried forward		480	
International Minerals Innovation Institute (IMII)	500	Board approved, funds transferred		500	
Carbon Capture, Utilization and Storage (CCUS)	500	Board approved, developing agreement		500	
Telecommunications Research Laboratories (TRLabs)	480	Board approved, funds transferred		480	890
Spring Board West Innovations (SBWI)	890	Board approved, recipient declined			-893
Enhance Oil Recovery (EOR) R&D	1,000	Approved EOR Projects Total	1,893		
EOR – Project 1		Oil Flow Mapping – Board Approved	468	468	
EOR – Project 2		RF Heating EOR Ph 1 – Board Approved	275	275	
EOR – Project 3		Biosurfactants – Board Approved	500	500	
EOR – Project 4		Oil Cut Meter – Board Approved	650	650	
Innovation Skills Capacity Development Program (ISCDP)		Board approved, being developed		350	
TOTALS	**4,450**			**4,203**	**597**

Progress in 2013–14

SAIF Project Details

The International Minerals Innovation Institute (IMII) was created in 2012 as a collaboration among industry, government, and institutions to address the need for education programs and research projects focused on industry-expressed needs. The IMII business plan called for $22.6 million from government and $19.9 million from industry by 2017-18. Since its inception, it has received $1.7 million from SAIF ($500,000 in 2013–14) toward the Saskatchewan Plan for Growth (Growth Plan)'s goal of "fully implementing IMII," and $3.9 million from industry. To date, IMII has committed $4.9 million to education initiatives and $256,000 to research and development projects. These investments have leveraged $9.7 million from other sources. The names of the initiatives and the collaborating institutions and the financial contributions to each are itemized below.

IMII Board Approved Projects	Delivery Organization(s)	IMII $	Other $	Total $
Education and Training Initiatives[1]			***(in $1000s)***	
Mining Engineering Options	University of Saskatchewan	$1,676	$424	$2,100
Centre for Minerals Innovation	SIAST (Phase 1)	$500		$500
Mine Training & Research Institute	Northlands College	$1,841	$8,190	$10,031
Intro to Mining	Parkland & Carlton Trail Colleges	$431	$369	$800
Electric & Safety Training	Cumberland College	$504		$504
Research and Development Projects[2]				
Enhancing Safety Cultures	University of Saskatchewan and SIAST	$176	$528	$704
Removing Salts from Effluent	University of Saskatchewan – Geology	$80	$240	$320
TOTALS		**$5,208**	**$9,751**	**$14,959**

1. *IMII funding for Education and Training initiatives is from IMII general funds which are provided 47 per cent by industry, 53 per cent from IS.*
2. *IMII funding for Research and Development is 25 per cent from IMII general funds (47 per cent industry) and 75 per cent from sponsoring companies, a commitment beyond the $200,000/year/company membership fee.*

Carbon Capture, Utilization and Storage (CCUS) was budgeted to receive $500,000 to assist in the re-orientation of CCUS research and development organizations located at the University of Regina in support of the Growth Plan goal of "Saskatchewan will remain an international leader in the development and demonstration of carbon capture and storage technology." IS chairs a committee of SaskPower and Ministry of the Economy representatives (CCUS-SK Committee) to ensure alignment of the province's investments in CCUS research with provincial CCUS priorities.

The CCUS-SK Committee has specified that provincially funded research needs to:

a. Ensure the successful implementation of Carbon Capture (CC) technology on Boundary Dam (BD) Unit 3, paving the way for the continued use of Saskatchewan's coal for electricity generation in an environmentally friendly manner;

b. Utilize CO_2 for enhanced oil recovery (EOR), increasing the production of oil and making the CC process economically viable;

c. Monitor long-term CO_2 storage in deep aquifers; and

d. Inform the public about CCUS, particularly as it relates to impact of CCUS on the environment to assist SaskPower in maintaining its public licence to operate.

The CCUS-SK Committee recommended, and the IS board approved, that the SAIF allocation for CCUS be used to support the following two initiatives:

1. CCUS Control System Training Equipment: The provision of $100,000 to the University of Regina to fund the acquisition of CCUS control system training equipment to enable the launch of a CCUS control systems class in January 2014. SaskPower is providing in-kind support of at least $100,000 and will support the initiative financially in the longer term.

2. Technology Management Initiative: The provision of $400,000 to the University of Regina to pay for three individuals from the university (a project support engineer, a computation chemist and an experimental chemist) to work primarily on SaskPower sites to structure and organize technical information emanating from CCUS initiatives both in Saskatchewan and from projects under development in other regions to fill in knowledge gaps and improve the technology. The deliverable will be information that will inform the expansion of CCUS technology to BD Units 4 and 5.

Telecommunications Research Laboratories (TRLabs) is a tri-province organization that provided technical support to entrepreneurs in the information technology space and had received funding from the province and SaskTel since 1992. Based on a study showing low impact relative to the investment, provincial support for this organization ended March 31, 2014.

SpringBoard West Innovations Inc. (SBWII) was a government-funded consulting service for startup companies. The organization declined SAIF funding and was closed on October 31, 2013. The $890,000 planned for SBWI was made available for other higher impact SAIF projects.

Enhanced Oil Recovery (EOR) Research and Development is an initiative put forward to encourage research into new ways of increasing oil production prompted by the fact that of Saskatchewan's estimated 48.3 billion barrels of Original Oil in Place (OOIP), 87.2 per cent cannot be recovered with known technologies. Of the 12.8 per cent OOIP considered recoverable, 10.5 per cent has been extracted, leaving only 2.3 per cent that can be recovered with existing technologies. To date five EOR projects have been approved – four in 2013–14.

A brief summary of the 2013-14 projects follows:

1. EOR-1: Mapping of In-Reservoir Oil Flow: This is the second phase of a multi-phase project designed to develop the technology needed to map the flow of oil in reservoirs, particularly those that have been subjected to the extraction process known as Cold Heavy Oil Production with Sand (CHOPS) that has been widely used in Saskatchewan's heavy oil fields. CHOPS involves the deliberate production of sand along with the oil it contains. Since after seven or eight years of production, wells produce mainly water rather than oil, it is theorized that channels (wormholes) have been created that become a preferential path for the recovery fluids (water) resulting in the recovery fluids no longer coming into contact with the oil that remains in the formation. Being able to map wormholes will allow:
   - Placement of new in-fill wells that avoid intersecting wormholes to access oil that is not on the wormhole path; and
   - Improved design of new enhanced oil recovery technologies.

   Deliverables in this project include:
   - Field injection and transmission of blank motes to better understand transmission probability in relation to mote size;
   - Field injection of imaging sensors and/or fluorescent blank motes and retrieval of optical data and/or RFID data to acquire geometric information of wormhole entrances in the wellbore area to increase understanding of mote diffusion;
   - Data on the transmission of sound through wormholes and its translation into wormhole characteristics (geometry, porosity, presence of different fluids);
   - Flow loop testing to determine position resolution and accuracy based on inertial navigation;
   - Assessment of the feasibility to use ultrasound transducers in mote geometries to provide in-reservoir ultrasound imaging;
   - Evaluation of motes capable of logging temperature and pressure as a function of time via their use in field injection experiments; and
   - A report compiling the findings of the work undertaken, conclusions regarding the feasibility of using motes to map wormholes and their structural characteristics, and the identification of future steps required to commercialize the technology.

2. EOR-2: Radio Frequency (RF) Heating EOR: SAIF support is for phase 1 of a two-phase project designed to assess the potential of RF heating as an EOR technology in Saskatchewan's heavy oil. RF heating technology holds considerable potential for volumetrically heating heavy oil formations and mobilizing hydrocarbons. Dielectric (RF) heating works by volumetrically exciting bipolar molecules and instantaneously heating a volume. This technology holds promise for reservoir heating due to both its instantaneous properties and the ability to reach out many meters. Deliverables in phase 1 include:
   - Reservoir model analysis and report;
   - Mechanical concepts conceptual design presentation package;
   - Antenna conceptual design including results of modeling and simulation;
   - Product development baseline;
   - Business model based on single well economic model; and
   - Report including analysis and recommendations regarding proceeding to phase 2, field demonstration.

3. EOR-3: Microbially-Generated Biosurfactants for Heavy Oil EOR: The project will focus on the stimulation of naturally occurring biosurfactant producing microbes, and testing of those biosurfactants in heavy oil reservoirs to enhance petroleum oil recovery (EOR) in the Lloydminster area. The project is the initial project within an iterative program of developing a biosurfactant approach to heavy oil enhanced recovery. This project will:
   - solate and identify DNA sequences consistent with biosurfactant and biopolymer producing bacteria and archaea indigenous to the reservoir from downhole samples taken from a range of wells in the reservoir;
   - Conduct chamber trials to optimize nutrient mixtures to maximize production of surfactants in situ for those indigenous biosurfactant producers found;
   - Conduct chamber trials to identify one or more optimal biosurfactant producers from 20 known species of surfactant producers in the proponent's bacterial inventory that may either be injected with nutrients into the reservoir for in situ production of biosurfactants, or grown in surface fermenters to produce biosurfactant in volumes sufficient for injection as a biochemical treatment in the reservoir;
   - Conduct DNA testing to determine impact of introducing a foreign bacteria or non-indigenously produced biosurfactant into the reservoir;
   - Subject resulting biosurfactants to modelling and bench-testing to determine characteristics (interfacial tension, PVT fluid analysis, sandpack and coreflood studies) to test the effectiveness of the surfactant in model reservoir conditions;
   - Assess the performance of the best surfactants for scale-up and use in field test in heavy oil reservoir;
   - Deliver those biosurfactants found meeting the criteria for success in the field to the project's oil company partner for field testing; and
   - Compile findings into a report.

4. EOR-4: Oil Cut Meter Development: This project will address a challenge faced by most producers of conventional oil – that of being able to cost effectively measure the amount of oil produced at the well head. As wells mature they produce less and less oil and more and more water. The majority of conventional wells produce fluids that contain less than 5 per cent oil. To address the inability of measuring individual well oil production, companies pool the fluid from a number of wells – some producing 100 per cent water and no oil. Removing the "water producers" saves the production and water handling costs associated with those wells and frees battery capacity to take on suspended wells that were taken offline in times of lower prices.

   Unfortunately, the only available meters are cost prohibitive at $50,000 per meter. The project will develop and test an affordable meter that will address the wide variety of conditions that it will encounter in the field. The sub-system prototypes and the assembled product will be tested during the development process with actual oil and water mixtures with varied gravity, density, temperature, chemical composition and presence of sand or entrained air. The project will deliver an instrument capable of measuring the amount of oil in the fluid produced at each well at an affordable price point.

Innovation Skills Capacity Development Program (ISCDP) was developed by Innovation Saskatchewan. It has programming to support innovation skills and capacity development in the Saskatchewan industry. The program will deliver information sessions, detailed innovation enhancement workshops and innovation capacity diagnostics that will provide companies with the capabilities to enhance their competitiveness. The targets for this program are workers in Saskatchewan's core sectors and their supply chains with the objective of diversifying the economy, supporting the Growth Plan, alleviating the skill shortage, and increasing profitability and performance of organizations.

The ISCDP draws heavily on a tool developed by Dr. Brooke Dobni of the Edwards School of Business at the University of Saskatchewan. The approach was developed with the knowledge that innovation can be scientifically measured and systematically managed. Dr. Dobni works with organizations that desire to become industry leaders and help others make the transition to sustainable innovation cultures. The targeted goals of implementing the innovation tool are to help companies create new value, assess core competencies, illuminate perspectives, challenge current practices and processes, and ignite innovative cultures.

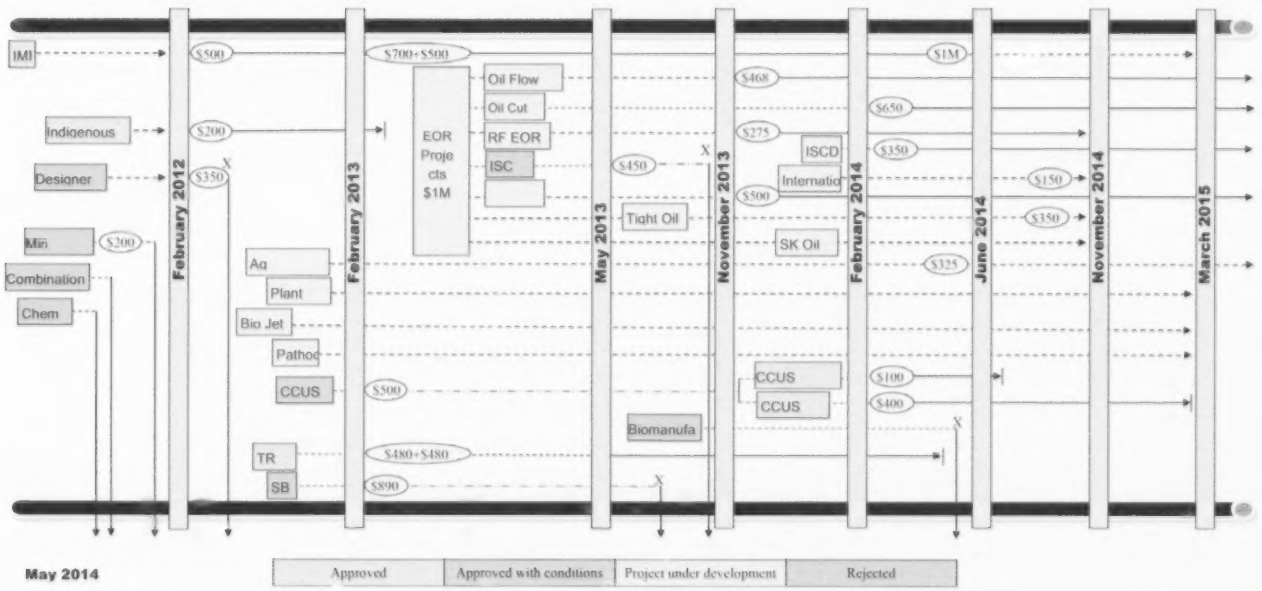
Dr. Dobni's tool was used to measure the innovation health of Saskatchewan companies. The result was a rating of 69, which is equal to the Fortune 1000 average. Ultimately the ISCDP aims to increase the Innovation Health Index from 69 to 72. The program will achieve this goal by supporting and facilitating the growth of the core sector supply chains and the enabling sectors as well as supporting the Manufacturing Centre of Excellence. Those organizations supporting the program to meet this objective include the Industrial Research Assistance Program (IRAP), Ministry of Agriculture, Ministry of the Economy, industry associations, Saskatchewan companies and other organizations within the province.

SAIF – Past, Present, and Future

The following diagram – the SAIF Pipeline – illustrates the history of SAIF, which includes projects that were proposed, evaluated and rejected; projects that were proposed, evaluated and funded; and projects that are still in various stages of evaluation.

innovation SASKATCHEWAN

Saskatchewan Advantage Innovation Fund (SAIF) Pipeline



Saskatchewan's Integrated Nuclear R&D Strategy

In 2011, the Government of Saskatchewan committed $57 million of funding over seven years, under the province's Integrated Nuclear Research & Development Strategy, for the following initiatives:

- Installation of Saskatchewan's first PET/CT (Positron emission tomography-computed tomography) scanner at the Royal University Hospital in Saskatoon;
- Construction of a Cyclotron facility at the University of Saskatchewan to be used for research and development, as well as to produce medical isotopes used by the PET/CT;
- Formation of the Sylvia Fedoruk Canadian Centre for Nuclear Innovation;
- Research into the use of linear accelerators for the production of molybdenum99 for medical diagnosis; and
- A Memorandum of Understanding with Hitachi-GE Nuclear Energy, Ltd. and associated companies for joint research into areas of nuclear technology and safety.

Responsibility for management of these initiatives was assigned to IS. Since the approval of the Integrated Nuclear R&D Strategy, IS has successfully managed all of these projects.

PET/CT Facility at the Royal University Hospital in Saskatoon
The PET/CT scanner began operation in May 2013. While the scanner will be used primarily to provide diagnostic care for Saskatchewan patients, it will also be used as a medical research tool. In 2012, IS provided $4 million toward the purchase cost of $6 million.

Establishment of Research Cyclotron
The capital project for construction of this $25.5 million facility, which includes a new cyclotron, research centre and nuclear substances laboratory, began in the June 2013 is scheduled to be completed by September 2014. The first isotopes for clinical use are expected in 2015, following regulatory approval of the facility and approval by Health Canada of the medical isotopes produced for use in humans. By 2016, the cyclotron will produce medical isotopes for Saskatchewan's PET/CT facility.

The cyclotron and related laboratories will be owned by the University of Saskatchewan and operated under licence by the Fedoruk Centre and will support activities under the Integrated Nuclear R&D Strategy, including research on new isotopes for human, animal and plant health applications, and the use of cyclotrons for industrial purposes.

The Sylvia Fedoruk Canadian Centre for Nuclear Innovation
The Fedoruk Centre began operation in 2012. IS is providing a total $30 million over seven years to invest in nuclear research focused on nuclear medicine, materials science, improving nuclear energy systems including small modular reactors and reactor safety, and the relationship between the nuclear domain and environment and society.

Also, the Fedoruk Centre will operate the cyclotron facility under an agreement with the University of Regina. IS is providing an additional $1 million per year for three years to support the costs.

To date, the Fedoruk Centre has funded two rounds of nuclear research projects totalling over $5 million, with the Fedoruk Centre contributing less than half of the total value. The request for proposals for a third round of research projects closed March 1, 2014, with projects totalling approximately $2.1 million of which approximately $1 million in funding will be from the Fedoruk Centre.

Canadian Light Source (CLS) Research on Commercial Production of Medical Isotopes
The Government of Saskatchewan, through Crown Investments Corporation, provided $2 million in funding to the CLS for equipment to study the production of molybdenum99 using a linear accelerator, matching a Government of Canada contribution of $10 million. The new CLS linear accelerator has successfully produced medical isotopes, and the CLS, along with its research partners, are now into a second phase to see if the technology developed can be successfully commercialized.

Hitachi Ltd. Nuclear Research Partnership
Funding of $5 million over five years (2013–18) was committed by the province, and matched by Hitachi in-kind/cash of $5 million, to do nuclear research in partnership with Saskatchewan-based research institutions. Research will focus on nuclear medicine, nuclear safety and small modular reactors as agreed to in a Memorandum of Understanding (MOU) signed in 2011 by Hitachi and its partner companies and the Province of Saskatchewan.

The University of Saskatchewan and Hitachi have negotiated an agreement for work totalling $1.2 million. This agreement covers five individual projects, all looking at how excess thermal energy from a Small Modular Reactor (SMR) could be used for purposes such as district heating, water desalination and greenhouse operation. The agreement received final signatures on January 23, 2014, and the work will be carried out over 30 months from that effective date.

Global Institute for Food Security

The Global Institute for Food Security (GIFS) is an excellent fit with current government priorities of investing in innovation and knowledge economy to create sustainable growth.

This new research institute announced in December 2012 with funding of $35 million from PotashCorp and $15 million from the Government of Saskatchewan represents an innovative approach to research and development that will address the increasing global demand for safe, nutritious and reliable food.

GIFS, located at the University of Saskatchewan, has a mandate to contribute solutions to the global food and nutrition challenge while also adding to the growth and sustainability of the Saskatchewan economy. The institute aims to engage in discovery that will lead to transformational increases in food crop productivity – in yields, environmental sustainability, profitability and resiliency in the face of changing weather, diseases and pests, and changing markets and consumer preferences.

In its first year, GIFS has initiated programs and partnerships that have begun to meet the ambitious goals in addressing the global challenge of food security:

- Investments have been made in research that will advance the goals of the provincial economic growth plan, goals that include increasing agricultural production and GDP and positioning Saskatchewan as a global biosciences leader;
- Partnerships have been identified with other research institutions in North America, Europe, Africa and Asia that will ensure that the impact of GIFS's research is felt globally; and
- Unique opportunities have been identified for interdisciplinary science and research at the University of Saskatchewan and in partner research institutions, paving the way for talented students and researchers to engage in transformative research.

Board Representations

The Government of Saskatchewan was represented by Innovation Saskatchewan on the following boards of directors:

- International Minerals Innovation Institute (IMII): http://imii.ca
- Sylvia Fedoruk Canadian Centre for Nuclear Innovation (CCNI): http://www.ccni.nu/
- The Canadian Light Source Synchrotron (CLS): http://www.lightsource.ca/
- Saskatchewan Research Network (SRnet): http://www.srnet.ca/
- Ag-West Bio: http://www.agwest.sk.ca/
- Saskatchewan Health Research Foundation (SHRF): http://www.shrf.ca/
- Vaccine and Infectious Disease Organization (VIDO): http://www.vido.org/

External Committees

In 2013-14, Innovation Saskatchewan (IS) has represented the Government of Saskatchewan on the following external committees:

- Provincial/Territorial Ministers Responsible for Innovation
  IS took part in Deputy Minister and Working Group level meetings. The Provincial/Territorial Ministers Responsible for Innovation is also responsible for reporting back to the Council of the Federation on innovation-related issues assigned to it.
- Pacific North West Economic Region (PNWER)
  IS participates as Saskatchewan's member of PNWER's Innovation and Technology Working Group. This work has led to a framework for enhanced regional economic development and the creation of an Innovation Assets Inventory for the PNWER region. The innovation working group continues to explore development and implementation of other tools and mechanisms to foster cross-border research and innovation partnerships.
- Natural Sciences and Engineering Research Council of Canada (NSERC) Prairies Advisory Committee
  IS is a member of the NSERC Prairies Advisory Committee. The mandate of this advisory committee is to provide advice on how NSERC can enhance academic-industry partnerships in research, innovation and advanced training. It provides input on the offices' activities and priorities, particularly efforts to strengthen collaboration between post-secondary institutions and the private sector. It also provides opportunities to exchange information, build consensus and enhance collaboration between post-secondary institutions, the private sector, federal and provincial departments, and other organizations active in regional innovation systems.
- International Minerals Innovation Institute (IMII) Panels
  IMII has two industry majority panels that convey individual company needs for enhanced education and training, and research and development. Panel members (company, institutional and governmental representatives) consider options for solutions to the identified needs. Finally, a sub-set of the panels (the industry and government funders) decide if an acceptable path forward has been agreed upon make recommendations to the board for project funding approval. IS represents the government's interests on both these panels and serves on its board.

2013–14 Financial Overview

Innovation Saskatchewan

Report of Management

for the Twelve Month Period Ended March 31, 2014

The accompanying financial statements are the responsibility of the management of Innovation Saskatchewan. They have been prepared in accordance with generally accepted accounting principles for the public sector, using management's best estimates and judgments, where appropriate. Management is responsible for the reliability and integrity of the financial statements, the notes to the financial statements and other financial information contained in this report. Management is also responsible for maintaining a system of internal controls, policies and procedures designed to provide reasonable assurance that assets are safeguarded and that accounting systems provide timely, accurate and reliable financial information.

The Innovation Saskatchewan Board of Directors is responsible for ensuring that management fulfills its responsibilities for financial reporting and internal control. The Office of the Provincial Auditor has audited the agency's financial statements in accordance with generally accepted auditing standards and their report follows.

Dr. Jerome Konecsni
Chief Executive Officer
Innovation Saskatchewan

July 28, 2014

INNOVATION SASKATCHEWAN

FINANCIAL STATEMENTS

For The Year Ended March 31, 2014

PROVINCIAL AUDITOR
of Saskatchewan

INDEPENDENT AUDITOR'S REPORT

To: The Members of the Legislative Assembly of Saskatchewan

I have audited the accompanying financial statements of Innovation Saskatchewan, which comprise the statement of financial position as at March 31, 2014, and the statements of operations and accumulated surplus, change in net financial assets, and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian public sector accounting standards for Treasury Board's approval, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

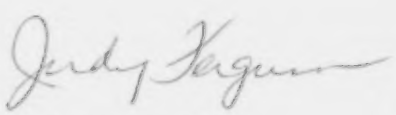
My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with Canadian generally accepted auditing standards. Those standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

Opinion

In my opinion, the financial statements present fairly, in all material respects, the financial position of Innovation Saskatchewan as at March 31, 2014, and the results of its operations, changes in its net financial assets, and its cash flows for the year then ended in accordance with Canadian public sector accounting standards.



Regina, Saskatchewan
July 28, 2014

Judy Ferguson, FCA
Acting Provincial Auditor

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Statement 1

Innovation Saskatchewan
Statement of Financial Position
March 31, 2014

	(thousands of dollars)	
Financial Assets	**2014**	**2013**
Due from General Revenue Fund (Note 3)	$ 9,794	$ 5,305
Accounts Receivable	45	15
	9,839	5,320
Liabilities		
Accounts Payable and Accrued Liabilities	545	635
Net Financial Assets (Statement 3)	9,294	4,685
Non-financial Assets		
Prepaid Expenses	16	1
Accumulated Surplus (Statement 2)	$ 9,310	$ 4,686

Designated Assets (Note 9)
(See accompanying notes to financial statements)

Statement 2

Innovation Saskatchewan
Statement of Operations and Accumulated Surplus
for the Year Ended March 31, 2014

(thousands of dollars)

	Budget (Note 4)	2014 Actual	2013 Actual
Revenue			
Grants from the General Revenue Fund	$ 28,006	$ 28,006	$ 6,769
Other		203	80
	28,006	28,209	6,849
Expenses (Note 7)			
Administration	2,286	2,615	2,043
Program Grants			
Nuclear Strategy (Note 9)	22,350	18,308	2,008
SAIF (Note 9)	3,370	2,110	700
Other	-	552	254
	28,006	23,585	5,005
Annual Surplus	$ -	4,624	1,844
Accumulated Surplus, Beginning of Year		4,686	2,842
Accumulated Surplus, End of Year (Statement 1)		$ 9,310	$ 4,686

(See accompanying notes to financial statements)

Statement 3

Innovation Saskatchewan
Statement of Change in Net Financial Assets
for the Year Ended March 31, 2014

	(thousands of dollars) 2014	2013
Annual Surplus	$ 4,624	$ 1,844
Increase in Prepaid Expenses	(15)	-
Increase in Financial Assets	4,609	1,844
Net Financial Assets, Beginning of Year	4,685	2,841
Net Financial Assets, End of Year (Statement 1)	$ 9,294	$ 4,685

(See accompanying notes to financial statements)

Statement 4

Innovation Saskatchewan
Statement of Cash Flows
for the Year Ended March 31, 2014

	(thousands of dollars)	
Cash Provided by Operating Activities	**2014**	**2013**
Cash Receipts from General Revenue Fund	$ 28,116	$ 6,854
Cash Receipts from Other Operating Activity	63	8
Cash Paid to Suppliers and Employees	(23,690)	(8,944)
Increase (Decrease) in Due From General Revenue Fund	4,489	(2,082)
Due from General Revenue Fund, Beginning of Year	5,305	7,387
Due from General Revenue Fund, End of Year	$ 9,794	$ 5,305

(See accompanying notes to financial statements)

Innovation Saskatchewan
Notes to the Financial Statements
For the Year ended March 31, 2014

1. Status of Innovation Saskatchewan

Innovation Saskatchewan was established under the provisions of *The Innovation Saskatchewan Act.*

Innovation Saskatchewan is the central agency of the Government of Saskatchewan with responsibility for implementing Saskatchewan's innovation priorities. Innovation Saskatchewan coordinates the strategic direction of the government's research and development and science and technology expenditures; provides advice on science and technology policy; coordinates the establishment and maintenance of science, research and development infrastructure; and provides advice and recommendations on research, development, demonstration, and the commercialization of new technologies and innovative processes in Saskatchewan. Innovation Saskatchewan is a corporate body eligible to receive monies primarily appropriated by the legislature for these purposes.

2. Significant Accounting Policies

These financial statements are prepared using Canadian Public Sector Accounting Standards published by CPA Canada and reflect the following significant accounting principles. Innovation Saskatchewan did not have any re-measurement gains and losses, therefore a statement of re-measurement gains and losses has not been provided.

a) Revenue

Revenue is recognized in the period in which the transactions or events occurred that give rise to the revenue. Grants from the General Revenue Fund are unrestricted in nature and are recognized as they are received or receivable.

b) Expenses

Expenses represent the cost of resources consumed during the year for operations and grants made to third-party organizations. Grants are recognized as expenses in the period during which the transfer is authorized and eligibility criteria are met.

c) Non-financial Assets

Non-financial assets are accounted for as assets because they can be used to provide services in future periods. These assets do not normally provide resources to discharge existing liabilities unless they are sold.

d) Measurement Uncertainty

The preparation of financial statements in accordance with Canadian Public Sector Accounting Standards requires management to make estimates and assumptions that affect the reported

amount of financial assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amount of revenues and expenses during the reporting period. These estimates are reviewed periodically, and, as adjustments become necessary, they are reported in the Statement of Operations and Accumulated Surplus in the period in which they become known.

3. Due from the General Revenue Fund

Innovation Saskatchewan's bank account is included in the Consolidated Offset Bank Concentration arrangement for the Government of Saskatchewan. Interest is paid on a quarterly basis at the government's 30-day average interest rate. The average rate for 2013-14 was 1.02% (2012-13 was 1.09%). Interest earned during the year was $140,298 (2012-13 – $71,543).

4. Budget Approval

The 2013-14 budget was approved by the Innovation Saskatchewan Board on December 18, 2012.

5. Related Parties

These financial statements include routine transactions with related parties. Innovation Saskatchewan is related to all Saskatchewan Crown agencies such as ministries, corporations, boards and commissions under the common control of the Government of Saskatchewan. Also, Innovation Saskatchewan is related to non-Crown Corporations and enterprises that the government jointly controls or significantly influences.

Related party transactions to March 31, 2014 include the following:

(thousands of dollars)

Expense	2013-14	2012-13
Ministry of Central Services	$ 33	$ 15
University of Saskatchewan	7,011	34
SaskTel	21	8
Sylvia Fedoruk Canadian Centre for Nuclear Innovation - Grant	11,426	2,000
Crown Investments Corporation of Saskatchewan	-	14
Innovation Place	144	123
Accounts Receivable	**42**	**15**
Accounts Payable	**112**	**53**

Contractual Obligations	(thousands of dollars) Leases	Programming
2014-15	$ 18	$11,814
2015-16	138	5,307
2016-17	138	4,137
2017-18	---	2,700
2018-19	---	---
Total	$ 294	$ 23,958

Other transactions with related parties and amounts due to/from them are described separately in the financial statements and the notes thereto.

Routine operating transactions with related parties are recorded at the rates charged by those organizations and are settled on normal trade terms. In addition, Innovation Saskatchewan pays Provincial Sales Tax to the Saskatchewan Ministry of Finance on all its taxable purchases.

6. Financial Instruments

Innovation Saskatchewan's financial instruments include: Due from the General Revenue Fund, Accounts Receivable, Accounts Payable and Accrued Liabilities. The carrying amount of these instruments approximates fair value due to their short-term nature. These instruments have no material interest or credit risk.

7. Expense by Object

	(thousands of dollars) March 31, 2014	March 31, 2013
Expenses		
Goods and Services	$ 833	$ 536
Grants and Transfers	20,970	2,962
Pension and Benefits	212	203
Salaries and Benefits	1,422	1,173
Travel	148	131
	$ 23,585	$ 5,005

8. Contractual Obligations

Innovation Saskatchewan has non-related party programming and operational obligations in future years.

	(thousands of dollars)	
	Programming	**Operational**
2014-15	599	93
2015-16	265	39
2016-17	100	-
	$ 964	$ 132

9. Designated Assets *(thousands of dollars)*

Innovation Saskatchewan is holding $9,182 as designated assets to be spent as follows:

	(thousands of dollars)	
Designated Assets	**March 31, 2014**	**March 31, 2013**
Nuclear Strategy Program	$6,842	$ 2,792
SAIF	2,340	1,080
	$ 9,182	$3,872

Innovation Saskatchewan maintains an internal fund called the Saskatchewan Advantage Innovation Fund (SAIF) for the purposes of providing support for innovation activities in areas such as research and development, demonstration, commercialization and education consistent with the Innovation Saskatchewan mandate. Decisions on projects funded by SAIF are based on a rigorous project evaluation criteria used to vet all projects and are recommended to the Innovation Saskatchewan Board of Directors for approval.

Due to delays in planning and negotiations, Innovation Saskatchewan has retained funds for its Nuclear Strategy Program for purposes of supporting the construction of the Saskatchewan Centre for Innovation in Cyclotron Science (SCI-CS) cyclotron facility and associated nuclear substances laboratory, part of the Sylvia Fedoruk Canadian Centre for Nuclear Innovation, and for joint research projects undertaken under the auspices of the Memorandums of Understanding with Hitachi, Ltd.

The designated assets are included in the Due from General Revenue Fund on the Statement of Financial Position.

10. Pension Costs

The employees of Innovation Saskatchewan participate in the Public Employees Pension Plan defined contribution plan. Pension costs of $23,873 (2012-13 - $21,825) are included in pension and benefits expense and comprise the cost of employer contributions for current service of employees during the year. Employer contribution levels are applied at 7.25% of salary. Innovation Saskatchewan's liability is limited to the required contributions.